

CLAIMS

1. A computer trading system for trading fungible instruments, comprising:
- 5 a communication network for transmitting deal related information messages comprising deal related information;
- 10 a plurality of order input devices connected to the network for generating price quotation messages comprising orders; and
- 15 a plurality of nodes connected to the network in a distributed arrangement and arranged to distribute deal information messages throughout the network, message distribution between nodes being via canonical paths between nodes, where a canonical path is the optimal route between a pair of nodes and wherein:
- 20 i. A canonical path between two given nodes is commutative;
- 25 ii. Where a canonical path between two given nodes includes one or more further nodes, the canonical path between the further nodes and each of the given nodes is the same as the sub-path between the given node and the further node that forms part of the canonical path between the given nodes; and
- iii. The canonical path between each node and itself is empty.
- 30 2. A computer trading system according to claim 1, wherein the nodes are arranged as a plurality of cliques, wherein each clique comprises a plurality of logically connected nodes, with each node in a clique being connected to all other nodes in the clique and

any two cliques are connected by a single path,
whereby the plurality of nodes form a clique tree.

3. A computer trading system according to claim
1, wherein messages transmitted on the network include
routing information.
4. A computer trading system according to claim 3,
wherein the routing information includes a
distribution pattern.
5. A computer trading system according to claim 3,
wherein the routing information includes a node
specified in the message send request.
6. A computer trading system according to claim 3,
wherein the routing information includes a routing
flag.
7. A computer trading system according to claim 4,
wherein the distribution pattern is a targeted
pattern in which a message is sent to a specified
destination node.
8. A computer trading system according to claim 4,
wherein the distribution pattern is a broadcast
pattern in which a message is to be sent to a node in
the network.
9. A computer trading system according to claim 4,
wherein the distribution pattern is a broadcast with
exclusion in which a message is to be sent to all
nodes in a network except a given node or set of
nodes.

10. A computer trading system according to claim 7, 8 or 9, wherein the distribution pattern is a complex pattern comprising two or more of said targeted pattern, said broadcast pattern and said broadcast with exclusion pattern.
11. A computer trading system according to claim 6, wherein the routing flags include a bypass flag indicating that message is to be delivered only to its final destination.
12. A computer trading system according to claim 6, wherein the routing flag includes an inspection flag indicating that the message is to be delivered to each node on the path from the message source to the message destination.
13. A computer trading system according to claim 6, wherein the routing flags include an interception flag indicating that the message is to be delivered only to the first node on the path from the source node to the destination.
14. A computer trading system according to claim 1, wherein the deal related information messages includes a SubmitOrder message sent from an order input device to a node, and the deal related information is an indication that a new order is entered into the system.
15. A computer trading system according to claim 14, wherein the deal related information messages includes an OrderAvailable message indicating that a new order has been submitted from an order input device, the OrderAvailable message being received at

a network node to which the submitting order input device is connected and broadcast through the network.

- 5 16. A computer trading system according to claim 15,
 wherein the deal related information messages
 includes an OrderCancelled message sent from an order
 input device to a node, and the deal related
10 information is an indication that an order is not
 longer available.
17. A computer trading system according to claim 16,
 wherein the deal related information messages
 includes an interrupt order message broadcast through
15 the network on receipt of an order cancelled message.
18. A computer trading system according to claim 17,
 wherein the deal related information messages
 includes a ProposeDeal message sent from a node at
20 which an order is matched and the deal related
 information is an indication that a deal between two
 orders is proposed.
19. A computer trading system according to claim 1,
25 wherein the deal related information message is a
 market update message broadcast the matching node and
 the deal related information is a charge in available
 and information is reserved amounts of an order.
- 30 20. A computer trading system according to claim 18,
 wherein the deal related information message is a
 proposed deal fail message sent by a node owning one
 side of a proposed deal and the deal related
 information is a rejection or partial rejection of
35 the deal.

21. A computer trading system according to claim 1,
wherein the deal related information message is a
HitNotMatched message sent by a node to whom a hit
5 order is submitted and the deal related information
is an indication that the deal proposed for the hit
order failed.
22. A computer trading system according to claim 1,
10 wherein the deal related information message is a
ConfirmOrder message sent by a node to an order input
device and the deal related information is whether an
order entered from the order input device is still
valid.
23. A computer trading system according to claim 12,
15 wherein the deal related information message is an
OrderConfirmed message sent from the order input
device to the node in response to a ConfirmOrder
20 message and the deal related information is still
valid.
24. A computer trading system according to claim 1,
25 wherein the deal related information message is a
deal done message sent from a node confirming a deal
to a node proposing a deal, and the deal related
information is that a proposed deal has been done.
25. A computer trading system according to claim 1,
30 wherein the deal related information message is a
list matched message sent from a node proposing a
deal and the deal related information is that a hit
order has been matched.

26. A computer trading system according to claim 1,
wherein the nodes are Broker nodes, each comprising a
store of orders available for trading in the system,
and means for distributing prices to at least one
5 order input device.

27. A computer trading system according to claim 26,
wherein the Broker nodes are arranged as a clique
tree, wherein each clique comprises a plurality of
10 logically connected Broker nodes, and any two of said
cliques are connected by a single path.

28. A computer trading system according to claim 27,
wherein the single path connecting two cliques
15 comprises a Broker node common to both cliques.

29. A computer trading system according to claim 1,
wherein the fungible instrument is a financial
instrument.

30. Anonymous trading system for trading fungible
instruments comprising:

a communications network for transmitting
electronic messages;

25 a plurality of order input devices connected
to the communications network each for generating
electronic price quotation messages including bid
and/or offer prices and for communication to a trader
of price quotation messages received from others of
30 said plurality of order input devices over the network;

a plurality of broking nodes connected to the
network for matching orders input into the system from
the order input devices, for executing deals where
orders are matched and for distributing price quotation

messages to the order input devices in response to the price quotation messages and the order matching;

wherein the broking nodes are arranged as a plurality of cliques, wherein each clique comprises a plurality of logically connected broking nodes, with each broking node in a clique being connected to all other broking nodes in the clique and any two cliques are connected by a single path, whereby the plurality of broking nodes form a clique tree.

31. An electronic trading system comprising:

a plurality of broking nodes for matching anonymous bids and offers entered into the system by counterparties and for executing matched bids and offers to complete a deal, the broking nodes being arranged as a plurality of cliques, wherein each clique comprises a plurality of logically connected broking nodes, with each broking node in the clique being connected to all other broking nodes in the clique and any two cliques being connected by a single path whereby the plurality of broking nodes form a clique tree.